

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE

ADVANCED SILICON TECHNOLOGIES, LLC, :
Plaintiff, :

v. :

RENESAS ELECTRONICS CORPORATION, :
RENESAS ELECTRONICS AMERICA, INC., :
Defendants. :

Civil Action No.

Jury Trial Demanded

COMPLAINT FOR PATENT INFRINGEMENT

Advanced Silicon Technologies, LLC (“Advanced Silicon” or “Plaintiff”), brings this action for patent infringement against Defendant Renesas Electronics Corporation and Defendant Renesas Electronics America, Inc. (collectively, “Renesas” or “Defendants”), and alleges as follows:

NATURE OF THE ACTION

1. This is an action for patent infringement under the patent laws of the United States, Title 35 of the United States Code. Advanced Silicon seeks remedies for Defendants’ infringement of Advanced Silicon’s U.S. Patent Nos. 6,339,428 (“the ’428 Patent”), 6,546,439 (“the ’439 Patent”), 6,630,935 (“the ’935 Patent”), and 8,933,945 (“the ’945 Patent”) (collectively, the “Patents-in-Suit”).

THE PARTIES

2. Advanced Silicon is a Delaware limited liability company, with a principal place of business at 118 Maplewood Avenue Unit C-2/Box 8, Portsmouth, NH 03801.

3. Upon information and belief, Renesas Electronics Corporation is a corporation organized and existing under the laws of Japan with its principal place of business at Toyosu Foresia, 3-2-24 Toyosu, Koto-Ku 135-0061 Tokyo Japan.

4. Renesas Electronics America, Inc. is a California corporation headquartered at 2801 Scott Boulevard, Santa Clara, California 95050.

JURISDICTION AND VENUE

5. This action arises under the Patent Act, 35 U.S.C. § 1 *et seq.*

6. Subject matter jurisdiction is proper in this Court under 28 U.S.C. §§ 1331 and 1338.

7. Venue in this district is proper under 28 U.S.C. §§ 1400(b) and 1391(b) and (c).

8. This Court has personal jurisdiction over Renesas by virtue of, *inter alia*, (i) committing at least a portion of the infringements alleged herein within this district; and (ii) regularly doing business or soliciting business, engaging in other persistent courses of conduct and/or deriving substantial revenue from good and services provided to individuals in this district.

THE PATENTS

9. United States Patent No. 6,339,428 is entitled “Method and Apparatus for Compressed Texture Caching in a Video Graphics System,” and issued January 15, 2002 to inventors Mark C. Fowler, Paul Vella, and Michael T. Wright. The ’428 Patent issued from United States Patent Application No. 09/356,398 filed on July 16, 1999. A copy of the ’428 Patent is attached hereto as Exhibit A.

10. United States Patent No. 6,546,439 is entitled “Method and System for Improved Data Access,” and issued April 8, 2003 to inventors Geoffrey S. Strongin and Qadeer A.

Qureshi. The '439 Patent issued from United States Patent Application No. 09/207,970 filed on December 9, 1998. A copy of the '439 Patent is attached hereto as Exhibit B.

11. United States Patent No. 6,630,935 is entitled "Geometric Engine Including a Computational Module for use in a Video Graphics Controller," and issued October 7, 2003 to inventors Ralph Clayton Taylor, Michael Andrew Mang, and Michael Mantor. The '935 Patent issued from United States Patent Application No. 09/556,474 filed on April 21, 2000. A copy of the '935 Patent is attached as Exhibit C.

12. United States Patent No. 8,933,945 is entitled "Dividing Work Among Multiple Graphics Pipelines Using a Super-Tiling Technique," and issued January 13, 2015 to inventors Mark M. Leather and Eric Demers. The '945 Patent issued from United States Patent Application No. 10/459,797 filed on June 12, 2003. The '945 Patent claims priority to U.S. provisional application serial number 60/429,641 filed on November 27, 2002. A copy of the '945 Patent is attached as Exhibit D.

13. Advanced Silicon is the lawful assignee and owner of all right, title and interest in and to the '428 Patent, the '439 Patent, the '935 Patent, and the '945 Patent.

INFRINGEMENT OF THE PATENTS-IN-SUIT

14. Renesas has infringed and continues to infringe at least four of Advanced Silicon's patents that cover important aspects of automotive infotainment systems, head-end units, navigation systems, graphics processors, microprocessors, integrated circuits, and other computing and graphics-capable electronic devices, and automobiles containing such components, including integrated circuits containing one or more microprocessors and/or graphics processors and other products containing the same, including without limitation, the Renesas R-car series of integrated circuits (the "Exemplary Renesas Products").

15. Advanced Silicon incorporates by reference in its allegations herein certain claim charts comparing the exemplary independent claims of the Patents-in-Suit to certain Exemplary Renesas Products as used in automotive infotainment systems and the automobiles containing same.

16. Specifically, Exhibits E through H are exemplary charts comparing the exemplary independent claims of the Patents-in-Suit to the Honda Accord Infotainment system, which includes a Renesas R8A7793 integrated circuit, and 2016 Honda Accord vehicles containing the same.

17. As set forth in Exhibits E through H, the Exemplary Renesas Products provide highly relevant circuitry and functionality that practices, in whole or in material part, the technology claimed by the Patents-in-Suit. Advanced Silicon believes that the Honda Accord Infotainment system and vehicles containing the same are exemplary of numerous other products that include Exemplary Renesas Products made, used, sold, imported, and offered for sale by Renesas or that include components provided by Renesas because such other products feature the same or substantially similar infringing functionality. Accordingly, on information and belief, numerous other devices that infringe the claims of the Patents-in-Suit have been made, used, sold, imported, and offered for sale by Renesas and/or its customers.

COUNT I
(Renesas' Infringement of the '428 Patent)

18. Paragraphs 1 through 17 are incorporated by reference as if fully restated herein.

19. Advanced Silicon is the assignee and lawful owner of all right, title and interest in and to the '428 Patent.

20. The '428 Patent is valid and enforceable.

21. Renesas has infringed, and is still infringing, the '428 Patent in at least this District by making, using, offering to sell, selling and/or importing Exemplary Renesas Products that infringe at least exemplary claims 1-6, 8-9, 10-14, 16-17, and 25-29 of the '428 Patent (the "Exemplary '428 Patent Claims") literally or by the doctrine of equivalence. For example, the Exemplary Renesas Products include Renesas' R8A7793 integrated circuit and other similar devices that directly infringe the Exemplary '428 Patent Claims.

22. On information and belief, Renesas directly infringes, and is contributing to and/or inducing the infringement of the '428 Patent by, at least, Honda in the exemplary products 2016 Honda Accord Infotainment system. On information and belief, Renesas designs, manufactures, and sells the Exemplary Renesas Products which directly infringe and, if used for their normal and intended purpose, lead to direct infringement of the invention claimed in the '428 Patent. Renesas actively, knowingly, and intentionally induced, and continues to actively, knowingly, and intentionally induce infringement of the '428 Patent by manufacturing and selling the Exemplary Renesas Products, for example but without limitation, graphics processors and integrated circuits, which if used for their normal and intended purpose lead to direct infringement of the invention claimed in the '428 Patent. There are no substantial non-infringing uses of the Exemplary Renesas Products. Renesas knows and intends that the components will be used in their ordinary and customary manner for their intended purpose, namely to facilitate computing and graphics, as evidenced by at least product literature distributed in connection with the subject components by Renesas.

23. Prior to the filing of this complaint, Renesas had actual knowledge of the '428 and that the Exemplary Renesas Products and the products incorporating them are imported into,

sold, offered for sale, and used in the United States. *See* Exhibit I, Letter to Renesas dated December 18, 2015.

24. In addition to actual knowledge of the '428 Patent, prior to the filing of this complaint, Renesas also had knowledge that use of the Exemplary Renesas Products in devices by, among others, Honda, and the use by consumers of the devices into which the Exemplary Renesas Products are incorporated, in the customary and intended manner, is likely to infringe the '428 Patent. *See* Exhibit I, Letter to Renesas dated December 18, 2015. On information and belief, Renesas has continued to sell the Exemplary Renesas Products and distribute product literature and website materials inducing Honda and others to use its products in the customary and intended manner which infringes the '428 Patent. Thus, on information and belief, Renesas is contributing to and/or inducing the infringement of the '428 Patent.

25. Exhibit E includes charts comparing exemplary independent claims 1, 10, and 25 of the '428 Patent to the Honda Accord Infotainment system, which includes a Renesas R8A7793 integrated circuit, and the 2016 Honda Accord vehicles containing the same. As set forth in this chart, the Exemplary Renesas Products provide highly relevant circuitry and functionality that practices, in whole or in material part, the technology claimed by the '428 Patent. Accordingly, the Exemplary Renesas Products incorporated in the charted systems satisfy one or all elements of claims 1, 10, and 25 of the '428 Patent.

26. Advanced Silicon is entitled to recover damages adequate to compensate for Renesas' infringement.

COUNT II
(Renesas' Infringement of the '439 Patent)

27. Paragraphs 1 through 25 are incorporated by reference as if fully restated herein.

28. Advanced Silicon is the assignee and lawful owner of all right, title and interest in and to the '439 Patent.

29. The '439 Patent is valid and enforceable.

30. Renesas has infringed, and is still infringing, the '439 Patent in at least this District by making, using, offering to sell, selling and/or importing products that infringe at least claims 1 – 11, and 14- 16 of the '439 Patent (the “Exemplary '439 Patent Claims”) literally or by the doctrine of equivalence. For example, Exemplary Renesas Products, including the Renesas' R8A7793 integrated circuit infringes the Exemplary '439 Patent Claims. On information and belief, Renesas directly infringes, and is contributing to and/or inducing the infringement of the '428 Patent by, at least, Honda in the 2016 Honda Accord Infotainment system. On information and belief, Renesas designs, manufactures, and sells the Exemplary Renesas Products which directly infringe and, if used for their normal and intended purpose, lead to direct infringement of the invention claimed in the '439 Patent. Renesas actively, knowingly, and intentionally induced, and continues to actively, knowingly, and intentionally induce infringement of the '439 Patent by manufacturing and selling the Exemplary Renesas Products for example but without limitation, graphics processors and integrated circuits, which if used for their normal and intended purpose lead to direct infringement of the invention claimed in the '439 Patent. There are no substantial non-infringing uses of the Exemplary Renesas Products. Renesas knows and intends that the components will be used in their ordinary and customary manner for their intended purpose, namely to facilitate computing or graphics rendering, as evidenced by at least product literature distributed in connection with the subject products by Renesas.

31. Prior to the filing of this complaint, Renesas had actual knowledge of the '439 Patent and that the Exemplary Renesas Products and the products incorporating them are

imported into, sold, offered for sale, and used in the United States. *See* Exhibit I, Letter to Renesas dated December 18, 2015.

32. In addition to actual knowledge of the '439 Patent, prior to the filing of this complaint, Renesas also had knowledge that use of the Exemplary Renesas Products in devices by, among others, Honda, and the use by consumers of the devices into which such the Exemplary Renesas Products are incorporated, in the customary and intended manner, is likely to infringe the '439 Patent. *See* Exhibit I, Letter to Renesas dated December 18, 2015. On information and belief, Renesas has continued to sell the Exemplary Renesas Products and distribute product literature and website materials inducing Honda and others to use its products in the customary and intended manner which infringes the '439 Patent. Thus, on information and belief, Renesas is contributing to and/or inducing the infringement of the Patents-in-Suit.

33. Exhibit F includes charts comparing exemplary independent claim 1 of the '439 Patent to the Honda Accord Infotainment system, Renesas R8A7793 integrated circuit thereof, and Honda Accord vehicles containing the same. As set forth in the chart, the Exemplary Renesas Products provide highly relevant circuitry and functionality that practices, in whole or in material part, the technology claimed by the '439 Patent. Accordingly, the Honda Accord Infotainment system and vehicles containing the same infringe at least independent claim 1 of the '439 Patent and the Exemplary Renesas Products incorporated in the charted systems satisfy one or more elements of claim 1 of the '439 Patent.

34. Advanced Silicon is entitled to recover damages adequate to compensate for Renesas' infringement.

COUNT III
(Renesas' Infringement of the '935 Patent)

35. Paragraphs 1 through 33 are incorporated by reference as if fully restated herein.

36. Advanced Silicon is the assignee and lawful owner of all right, title and interest in and to the '935 Patent.

37. The '935 Patent is valid and enforceable.

38. Renesas has infringed, and is still infringing, the '935 Patent in at least this District by making, using, offering to sell, selling and/or importing the Exemplary Renesas Products that infringe at least exemplary claims 1, 2, and 4 – 8 of the '935 Patent literally or by the doctrine of equivalence. For example, the Exemplary Renesas Products, including the Renesas's R8A7793 integrated circuit, infringe the '935 Patent.

39. On information and belief, Renesas directly infringes, and is contributing to and/or inducing the infringement of the '935 Patent by, at least, Honda as seen in the 2016 Honda Accord Infotainment system. On information and belief, Renesas designs, manufactures, and sells the Exemplary Renesas Products which directly infringe and, if used for their normal and intended purpose, lead to direct infringement of the invention claimed in the '935 Patent. Renesas actively, knowingly, and intentionally induced, and continues to actively, knowingly, and intentionally induce infringement of the '935 Patent by manufacturing and selling the Exemplary Renesas Products, for example but without limitation, graphics processors and integrated circuits, which if used for their normal and intended purpose lead to direct infringement of the invention claimed in the '935 Patent. There are no substantial noninfringing uses of the Exemplary Renesas Products. Renesas knows and intends that the Exemplary Renesas Products. will be used in their ordinary and customary manner for their intended purpose, namely to facilitate computing or graphics, as evidenced by at least product literature distributed in connection with the subject components by Renesas.

40. Prior to the filing of this complaint, Renesas had actual knowledge of the '935 Patent and that the products incorporating them are imported into, sold, offered for sale, and used in the United States. *See* Exhibit I, Letter to Renesas dated December 18, 2015.

41. In addition to actual knowledge of the '935 Patent, prior to the filing of this complaint, Renesas also had knowledge that use of Exemplary Renesas Products in devices by, among others, Honda, and the use by consumers of the devices into which such Exemplary Renesas Products are incorporated, in the customary and intended manner, infringes the '935 Patent. *See* Exhibit I, Letter to Renesas dated December 18, 2015. On information and belief, Renesas has continued to sell the Exemplary Renesas Products. and distribute product literature and website materials inducing Honda, and others to use its products in the customary and intended manner which infringes the '935 Patent. Thus, on information and belief, Renesas is contributing to and/or inducing the infringement of the '935 Patent.

42. Exhibit G includes charts comparing independent claim 1 of the '935 Patent to the Honda Accord Infotainment system, Renesas R8A7793 integrated circuit thereof, and 2015 Honda Accord vehicles containing the same. As set forth in these charts, the Exemplary Renesas Products provide highly relevant circuitry and functionality that practices, in whole or in material part, the technology claimed by the '935 Patent. Accordingly, the Exemplary Renesas Products incorporated in the charted systems satisfy one or more elements of claim 1 of the '935 Patent.

43. Advanced Silicon is entitled to recover damages adequate to compensate for Renesas' infringement.

COUNT IV
(Renesas' Infringement of the '945 Patent)

44. Paragraphs 1 through 42 are incorporated by reference as if fully restated herein.

45. Advanced Silicon is the assignee and lawful owner of all right, title and interest in and to the '945 Patent.

46. The '945 Patent is valid and enforceable.

47. Renesas has infringed, and is still infringing, the '945 Patent in at least this District by making, using, offering to sell, selling and/or importing products that infringe at least claims 1 – 11 and 21 of the '945 Patent (the "Exemplary '945 Patent Claims") literally or by the doctrine of equivalence. For example, the Exemplary Renesas Products, including the Renesas' R8A7793 integrated circuit, infringe the '945 Patent.

48. On information and belief, Renesas directly infringes, and is contributing to and/or inducing the infringement of the '945 Patent by, at least, Honda as seen in the 2016 Honda Accord infotainment system. On information and belief, Renesas designs, manufactures, and sells one or more Exemplary Renesas Products which, if used for their normal and intended purpose, lead to direct infringement of the invention claimed in the '945 Patent. Renesas actively, knowingly, and intentionally induced, and continues to actively, knowingly, and intentionally induce infringement of the '945 Patent by manufacturing and selling the Exemplary NVIDIA Products, for example but without limitation, graphics processors and integrated circuits, which if used for their normal and intended purpose lead to direct infringement of the invention claimed in the '945 Patent. There are no substantial non-infringing uses of these Exemplary Renesas Products. Renesas knows and intends that the components will be used in their ordinary and customary manner for their intended purpose, namely to facilitate computing or graphics, as evidenced by at least product literature distributed in connection with the subject components by Renesas.

49. Prior to the filing of this complaint, Renesas had actual knowledge of the '945 Patent and that the Exemplary Renesas Products and the products incorporating them are imported into, sold, offered for sale, and used in the United States. *See* Exhibit I, Letter to Renesas dated December 18, 2015.

50. In addition to actual knowledge of the '945 Patent, prior to the filing of this complaint, Renesas also had knowledge that use of the Exemplary Renesas Products in devices by, among others, Honda, and the use by consumers of the devices into which such Exemplary Renesas Products are incorporated, in the customary and intended manner, infringes the '945 Patent. *See* Exhibit I, Letter to Renesas dated December 18, 2015. On information and belief, Renesas has continued to sell the Exemplary Renesas Products and distribute product literature and website materials inducing Honda and others to use its products in the customary and intended manner which infringes the '945 Patent. Thus, on information and belief, Renesas is contributing to and/or inducing the infringement of the Patents-in-Suit.

51. Exhibit H includes charts comparing exemplary independent claims 1 and 21 of the '945 Patent to the Honda Accord Infotainment system, Renesas R8A7793 integrated circuit thereof, and 2016 Honda Accord vehicles containing the same. As set forth in these charts, the Exemplary Renesas Products provide highly relevant circuitry and functionality that practices, in whole or in material part, the technology claimed by the '945 Patent. Accordingly, the Exemplary Renesas Products incorporated in the charted systems satisfy one or all elements of claims 1 and 21 of the '945 Patent.

52. Advanced Silicon is entitled to recover damages adequate to compensate for Renesas' infringement.

PRAYER FOR RELIEF

WHEREFORE, Plaintiff respectfully requests the following relief:

- a) A judgment that the '428 Patent, the '439 Patent, the '935 Patent, and the '945 Patent are valid and enforceable.
- b) A judgment that Defendants have infringed, contributorily infringed, and/or induced infringement of one or more claims of the '428 Patent;
- c) A judgment that Defendants have infringed, contributorily infringed, and/or induced infringement of one or more claims of the '439 Patent;
- d) A judgment that Defendants have infringed, contributorily infringed, and/or induced infringement of one or more claims of the '935 Patent;
- e) A judgment that Defendants have infringed, contributorily infringed, and/or induced infringement of one or more claims of the '945 Patent; and
- g) A judgment that awards Plaintiff all appropriate damages under 35 U.S.C. § 284 for Defendants' past infringement, and any continuing or future infringement of the Patents-in-Suit, up until the date such judgment is entered, including pre or post judgment interest, costs, and disbursements as justified under 35 U.S.C. § 284 and, if necessary, to adequately compensate Plaintiff for Defendants' infringement, an accounting:
 - i. that this case be declared exceptional within the meaning of 35 U.S.C. § 285 and that Plaintiff be awarded its reasonable attorneys' fees against Defendants that it incurs in prosecuting this action;
 - ii. that Plaintiff be awarded costs, and expenses that it incurs in prosecuting this action; and

iii. that Plaintiff be awarded such further relief at law or in equity as the Court deems just and proper.

DEMAND FOR JURY TRIAL

Plaintiff hereby demands trial by jury on all claims and issues so triable.

Dated: December 21, 2015

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